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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,867	07/22/2003	Jari Hulkkonen	59643-00282	6401

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SQUIRE, SANDERS & DEMPSEY L.L.P.
14TH FLOOR
8000 TOWERS CRESCENT
TYSONS CORNER, VA 22182

EXAMINER

WIMER, MICHAEL C

ART UNIT PAPER NUMBER

2828

DATE MAILED: 03/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/623,867	Applicant(s) HULKKONEN ET AL.	
	Examiner Michael C. Wimer	Art Unit 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-24 and 26-34 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,3-24 and 26-34 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding Claims 3 and 26, they depend from canceled claims 2 and 25 respectively.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1,3-24 and 26-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martek (6268828).

Regarding Claims 1,9-12 and 24,25-34 Martek shows an antenna arrangement, for example in Fig. 9, comprising at least two antennas for providing coverage to a plurality of mobile units (e.g., cellular phones within a cell system network) and having at least two different antennas 2x-1,2x-2 and 2x-3,2x-4, provided with a plurality of frequencies within the band of operation, providing two separate phase centers for each antenna, thus, defining "different antennas", where a

different beam-tilt is provided (see col. 16, lines 41-50), the adjusting means 530a (col. 16, lines 51-62) provides for dynamically adjusting transmission properties of the lower antenna. Two different vertical properties are defined because of the dynamically-provided downtilt. Thus, it would have been obvious to the skilled artisan that the entire antenna array provides a "predetermined coverage area" and since two different arrays are defined, so are two different areas that those radiation patterns service.

Also, it would have been obvious to the skilled artisan that the lower antenna provides for distribution of users within the area covered by the beam therefrom, particularly since separate and different phase centers are associated with each respective antenna array.

The use of allocating means, dynamically as claimed, is provided by allocating at least one user equipment to the group of users in the area noted above (i.e., the beam with the most beam tilt). A skilled artisan would have found it obvious that allocating means comprises the network disclosed by Martek, where an individual cellular phone is allocated a frequency pair, has an identification within the network and thus utilizes the particular beam (either one having varying degrees of beam-tilt). Such a condition derives a dynamically adjusted transmission property for a particular antenna array.

Regarding Claim 4, the antennas, frequency pairs/groups and groups of users are associated with particular beams and frequencies. A skilled artisan would have found it obvious that these conditions obtain in order for the network to

handle all calls associated with the radio units. Regarding Claims 3,5-8 and13-23, a skilled artisan would have found it obvious that the users are associated with respective layers, corresponding to the beams, and their frequency pairs associated with their groups of users within respective cells.

Response to Arguments

5. Applicant's arguments filed 2/10/2006 have been fully considered but they are not persuasive. Specifically, the addition of defining two different areas of radio coverage does not necessarily define over Martek. The two separate antenna groups/arrays provide different coverage areas and thus define two areas. The entire antenna array/system defines a predetermined coverage area, or a much broader area than either of the two coverage areas provided for via the two arrays. It would appear that since the lower elements in the array are down-tilted by shifting the phase of the lower elements in a column, relative to the upper elements, then two coverage areas are defined within the larger predetermined area of coverage, both areas exhibiting different qualities. Since two phase centers are obtained with this system then the two separate coverage areas are real and defined. Since the system of Martek provides applicant's claimed intention of separate areas of coverage within a predetermined area of coverage, the claims are deemed to be met in terms of limitations of an antenna array characterized by particular beams/radiation patterns.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Wimer whose telephone number is (571) 272-1833. The examiner can normally be reached on M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun O. Harvey can be reached on (571) 272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael C. Wimer
Primary Examiner
Art Unit 2828

MCW
3/1/2006